

REMARKS

Claims 10-14 and 16 are allowed. Claims 1, 2, 4-7, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Allison et al. (U.S. Patent Application Publication Number 2003/0129991, hereinafter "Allison") in view of Schuster et al. (U.S. Patent Number 6,857,021, hereinafter "Schuster"), claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Allison and Schuster in view of Sasada (U.S. Patent Number 6,978,135), claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Allison and Schuster in view of Arrington, Jr. et al. (U.S. Patent Number 5,918,176, hereinafter "Arrington"), and claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Allison and Schuster in view of Narayanan et al. (U.S. Patent Application Publication Number 2003/0220990, hereinafter "Narayanan"). In addition, claims 1-9 and 15 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention and claim 15 stands rejected under 35 U.S.C. § 101. Respectfully disagreeing with these rejections, reconsideration is requested by the applicant. Nonetheless, the applicant has amended independent claim 15 to more clearly recite the present invention but not to narrow its scope.

Regarding the Examiner's comments in section 5(a) of the first office action, the applicant submits that no amendment is needed. The Examiner says that it is unclear if the second registration message is sent by the same SIP proxy that sends the first. In some embodiments of the present invention the same SIP proxy sends both registration messages; however, the same SIP proxy need not send both registration messages. Claims 1 and 15 purposefully do not recite language to address all of the possible embodiments of the present invention. Rather, claims 1 and 15 are written to succinctly recite a set of elements believed to be patentable over the prior art, without reciting various implementation options. The applicant submits that this is well-known claiming practice and that the omission of implementation details does not render a claim

indefinite. The use of open-ended “comprising” language implies that what is not recited may or may not be added to embodiments within the scope of the present invention. Regarding the question of why two registration messages may be sent, the applicant submits that this varies depending on the embodiment but could be triggered by something as simple as a timer expiration.

Regarding the Examiner’s comments in section 5(b) of the first office action, the applicant submits that no amendment is needed. The Examiner questions why a response is not received for the first registration message and who is receiving the response. In some embodiments of the present invention such a response may be received while in others (or in certain situations) such a response may not be received. Also, the sender of the second registration message may receive this response, but in some embodiments another device may receive it. Claims 1 and 15 purposefully do not recite language to address all of the possible embodiments of the present invention. Rather, claims 1 and 15 are written to succinctly recite a set of elements believed to be patentable over the prior art, without reciting various implementation options. The applicant submits that this is well-known claiming practice and that the omission of implementation details does not render a claim indefinite. The use of open-ended “comprising” language implies that what is not recited may or may not be added to embodiments within the scope of the present invention.

Regarding the Examiner’s comments in sections 5(c) of the first office action, the applicant submits that no amendment is needed. The Examiner says that it is unclear how any contact address is provided by the SIP proxy. Depending on the embodiment of the present invention a contact address may be contained in both registration messages, in either registration message, or in other messaging. Claims 1 and 15 purposefully do not recite language to address all of the possible embodiments of the present invention. Rather, claims 1 and 15 are written to succinctly recite a set of elements believed to be patentable over the prior art, without reciting various implementation options. The applicant submits that this is well-known claiming practice and that the omission of implementation details does not render a claim indefinite. The use of open-ended “comprising” language implies that what is not recited may or may not be added to embodiments within the scope of the present invention.

Regarding the Examiner's comments in sections 5(d) of the first office action, the applicant submits that no amendment is needed. The Examiner says that it is unclear who is sending the deregistration message. Depending on the embodiment of the present invention, the sender of the deregistration message may be the receiver of the response that indicates a contact address more recent than any provided by the SIP proxy UA, but in some embodiments another device may send it. Claims 1 and 15 purposefully do not recite language to address all of the possible embodiments of the present invention. Rather, claims 1 and 15 are written to succinctly recite a set of elements believed to be patentable over the prior art, without reciting various implementation options. The applicant submits that this is well-known claiming practice and that the omission of implementation details does not render a claim indefinite. The use of open-ended "comprising" language implies that what is not recited may or may not be added to embodiments within the scope of the present invention.

Regarding the rejection of claims 1 and 15 in view of prior art, the Examiner cites various portions of Allison as teaching what is claimed. In particular, paragraphs 50, 62, 67 and 68 of Allison are cited and read as follows (emphasis added):

[0050] Referring to FIG. 6, in line 1, when a mobile subscriber first moves into an area served by MSC 114, the mobile subscriber's handset registers with VLR 116. **VLR 116 generates an UpdateLocation message in response to the registration.** In this example, VLR 116 addresses the UpdateLocation message to the point code and subsystem number of the **MMR node 300** with the routing indicator (RI) in the message set to "route-on-SSN."

...

[0062] In line 4, the InsertSubscriberData message is routed from home network 100 back to the visited network 110, where it is received by MMR node 300. Upon receipt by MMR node 300, the message is examined and internally routed to LCM 340 in a manner similar to that described previously with regard to the original UpdateLocation message processing. The InsertSubscriberData message is internally directed to the location register caching application 346 (LRCA), where a copy of some or all of the information in the message is stored in HLC 352, including the mobile subscriber identification number and a timestamp.

...

[0067] When mobile subscriber 126 roams from the service area of MSC 114/VLR 116 and enters the service area of MSC 120 /VLR 122, the mobile subscriber's handset sends a registration message to MSC 120. In response, MSC 120 sends a registration message to VLR 122 (line 1). As a consequence of such registration activity, **an UpdateLocation transaction will be initiated by new serving VLR 122. As described above, this**

UpdateLocation message may be addressed to MMR node 300, or the message may be intercepted during routing operations at MMR node 300. In line 3, the Update Location message is forwarded to MMR node 300. Within MMR 300, the UpdateLocation message is directed to location register caching application 346 (LRCA), where a lookup is performed in HLC 352 using a mobile subscriber identifier (e.g., MSISDN, IMSI, etc.) extracted from the message. In this case, a lookup in the HLC 352 returns the entry associated with mobile subscriber 126 that was previously inserted during the initial transaction. Because the HLC has a record of this subscriber with a valid timestamp, the MMR knows it does not need to communicate with the HLR in order to complete this transaction. Rather, the MMR can act on behalf of the HLR in communicating with the VLR. The HLR would still communicate with the MMR for messages it receives concerning this subscriber. In this way, the MMR is also acting on behalf of the VLR. As such, LRCA 346 extracts the mobile subscriber's information from HLC 352 and generates an InsertSubscriberData message containing some or all of the mobile subscriber's data that was stored therein. **The InsertSubscriberData message is then passed to GTT module 354 for address translation processing and routing to the new serving VLR 122** via routing module 348 and LIM 308 (line 3).

[0068] In a manner similar to that described above, a new entry for the mobile subscriber 126 is next inserted into VLC 350. As indicated in Table 1 above, this new entry includes the mobile subscriber identification number, a timestamp, as well as serving VLR and serving MSC identification information extracted from the UpdateLocation message. Because this is the second UpdateLocation message received for the mobile subscriber, an entry for mobile subscriber 126 already exists in VLC 350. This existing VLC entry includes a different timestamp and identifier information associated with the previously serving MSC 114 and VLR 116. Referring again to FIG. 7, the confirmed nature of the UpdateLocation and InsertSubscriberData transactions requires that the new serving VLR 122 respond to MMR 300 with an InsertSubscriberData_Ack (or appropriate error) message (line 4). Upon receipt of the InsertSubscriberData_Ack message LRCA 346 may complete the UpdateLocation transaction via the formulation of an UpdateLocation_Ack (or appropriate error) message, which is routed to the new serving VLR 122 (line 5). **In one embodiment, MMR node 300 may then generate a MAP CancelLocation message using the information stored in the old or existing entry and forward the CancelLocation message to the previous serving VLR 116.** This message informs the previous VLR 116 to purge the subscriber 126 from its database since it is now registered with a new VLR. This action is normally performed by the HLR, but in this case it is performed by the MMR on the HLR's behalf. However, other embodiments of the present invention may postpone the sending of a CancelLocation message and allow the old or existing entry to remain in the VLC even after a new serving VLR in the visited network has been identified. The reasoning and advantage of postponing the deletion of the subscriber data from the previous VLR is that if a subscriber is frequently switching back and forth between two VLR areas, then both VLRs can retain the information and do not have to initiate new location update procedures every time the roaming subscriber returns. For instance, if a subscriber is in the area serviced by VLR 116 and crosses into VLR 122's area, then ten minutes later crosses back into VLR 116's area, then five minutes later crosses back into VLR 122's area, this would normally require four separate

full location update procedures. However, if the MMR uses the information it intercepted from the initial update to VLR 116 to perform the first update to VLR 122, and does not tell VLR 116 to cancel the subscriber's information, then when the subscriber crosses back into VLR 116's area, the full location update procedure is not required since VLR 116 still contains the subscriber's information. Rather, a "condensed" location update procedure is used that eliminates some of the messages normally required. This "condensed" procedure is described in detail in 3G TS 23. 116 v3.0.0, Technical Specification Group Core Network; Super-Charger Technical Realisation; Stage 2 (Release 99). Likewise, since VLR 122 is not told to purge the subscriber's information, then a full location update procedure is not required when the subscriber returns to its area for the second time. Again, a "condensed" procedure is used that further reduces the signaling. Note that the HLR is not involved in any of the above transactions. If a message comes to the MMR from the HLR (in this case, the MMR is acting on behalf of the VLR), the MMR uses the timestamps associated with the data it receives as part of the "condensed" procedure to determine the valid VLR area that the mobile is currently associated with and passes this information to the HLR on behalf of the VLR. Such postponement may be based on a time interval (e.g., a statistically determined time interval, fixed time interval, etc.), or may rely on the receipt of a CancelLocation message from the mobile subscriber's HLR 104, when the subscriber goes to a new network not associated with MMR 300. Note the new network may or may not have MMR functionality. In such scenarios, one embodiment of **an MMR node** of the present invention **may generate and distribute copies of a CancelLocation message to multiple VLR nodes** in the visited network 110, as illustrated in FIGS. 8 and 9. That is, when mobile subscriber 126 roams out of visited network 110 and into another visited network 140, MS 126 registers the mobile subscriber with VLR 146 (line 1), and the new serving VLR 146 triggers an UpdateLocation. This UpdateLocation message will be routed to the mobile subscriber's HLR 104 (line 2) and the appropriate acknowledgement and InsertSubscriberData messages may be exchanged (lines 3-5). After processing the UpdateLocation message, HLR 104 will generate a CancelLocation message directed to the last known location (which in this case is MMR 300). This CancelLocation message is routed to the former visited network 110 and will be received by MMR node 300 (line 6). In response to the receipt of this CancelLocation message LRCA 346 may determine which VLRs in the network 110 have served mobile subscriber 126 using data stored in the VLC 350 and not yet received a cancel location. Once the former serving VLR information is extracted from VLC 350, copies of the received **CancelLocation message may be generated and sent to all concerned VLR nodes** (lines 7 and 8). Upon completion of such processing, entries associated with mobile subscriber 126 may be purged from both VLC 350 and HLC 352.

In contrast, independent claim 1 recites (emphasis added) "receiving, in response to the second registration message, a response that indicates a contact address more recent than any provided by the SIP proxy UA; and **sending, in response to the received response**, a deregistration message for the remote unit **to the SIP registrar**." Independent claim 15 recites (emphasis added) "adapted to... **send, in response to**

the received response, a deregistration message for the remote unit **to the SIP registrar.**”

On page 5, in section 10 of the present office action, the Examiner asserts that VLR 122 receiving an InsertSubscriberData Message, as described by Allison, teaches the response to the second registration message, as recited by claim 1. The Examiner then asserts that the CancelLocation Message, as described by Allison in paragraph 68, teaches the deregistration message of claim 1. However, the applicant submits that Allison [0068] teaches that the CancelLocation Message is sent by MMR node 300 to one or more VLRs. Since the Examiner has asserted that MMR node 300 is equivalent to the registrar of claim 1, the applicant submits that the CancelLocation Message sent by MMR node 300 does not teach what is recited by claim 1.

Claim 1 recites (emphasis added) “receiving, in response to the second registration message, a response that indicates a contact address more recent than any provided by the SIP proxy UA; and **sending, in response to the received response**, a deregistration message for the remote unit **to the SIP registrar.**” Thus, the deregistration message is sent to the registrar, not by the registrar. Also, the deregistration message is sent in response to the received response, which the Examiner asserts is taught by VLR 122 receiving an InsertSubscriberData Message in Allison. However, the applicant submits that the CancelLocation Message being sent by MMR node 300 (in Allison [0068]) to one or more VLRs cannot be said to be in response to the VLR 122 receiving an InsertSubscriberData Message. Would not an action taken **in response** to VLR 122 receiving a message be taken by VLR 122 itself, rather than MMR node 300?

Independent claim 15 recites (emphasis added) “A radio access network (RAN) component comprising:... **a SIP proxy user agent**... adapted to... **send, in response to the received response**, a deregistration message for the remote unit **to the SIP registrar.**” Thus, similar to claim 1, the deregistration message of claim 15 is sent to the registrar, not by the registrar. In addition, the deregistration message is sent by the user agent. The applicants fail to see how Allison [0068] teaches sending the deregistration message by MSC/VLR 114/116, the Allison devices that the Examiner asserts to be equivalent to the user agent.

On page 5, in section 11 of the present office action, the Examiner asserts that it would have been obvious to include sending in response to the received response or any other type of messages in order to trigger transmission of CancelLocation message allowing management of location information. However, the applicants submit that this assertion does not address the fact the deregistration message is sent to the SIP registrar, which the Examiner asserts is MMR node 300, while the CancelLocation Message is sent by MMR node 300. The Examiner appears to be arguing that Allison does not teach the sending of a deregistration message to the SIP registrar, but that such a message would be obvious to add even though the communication system of Allison operates just fine without such a message. The applicant fails to see the need in Allison for adding a deregistration message, as recited in the present claims.

Regarding the combination of Allison and Schuster, the Examiner states that it would have been obvious to one having ordinary skill in the art to combine the teachings of Allison and Schuster because Schuster's teaching of SIP proxy user agent and SIP registrar would increase the functionality of Allison's system by providing SIP registration management. However, the applicant submits that this motivation is too generic. The applicant submits that a person of skill in the art could combine the concepts taught by a great many pieces of prior art in order to increase the functionality of a given system by providing SIP registration management. This is true because increasing the functional capabilities of communication systems is a very general motivation, pervasive in the competitive communications marketplace. To the extent that increasing the functional capabilities of communication systems provides a competitive advantage, increasing such capabilities is a motivator for a great many things that are done in the communications industry. Moreover, for the Examiner to establish a prima facie case of obviousness, the Examiner must provide a teaching or suggestion from the prior art to combine the references. The applicant respectfully requests the Examiner either to provide a teaching or suggestion from the prior art to combine the cited references or to withdraw the rejection.

Since none of the references cited, either independently or in combination, teach all of the limitations of independent claims 1 or 15, or therefore, all the limitations of their respective dependent claims, it is asserted that neither anticipation nor a prima facie

case for obviousness has been shown. It is also asserted that a prima facie case for obviousness has not been shown, since a sufficient motivation for combining the references has not been demonstrated. No remaining grounds for rejection or objection being given, the claims in their present form are asserted to be patentable over the prior art of record and in condition for allowance. Therefore, allowance and issuance of this case is earnestly solicited.

The Examiner is invited to contact the undersigned, if such communication would advance the prosecution of the present application. Lastly, please charge any additional fees (including extension of time fees) or credit overpayment to Deposit Account No. **502117 -- Motorola, Inc.**

Respectfully submitted,
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